

CLAIMS

1. A protein crystallizing device comprising:
 - a protein crystallizing microarray having at least two crystallizing agent holding parts which hold a protein
 - 5 crystallizing agent, and
 - a plate laminated on said protein crystallizing microarray, said plate having
 - crystallizing sections corresponding to said crystallizing agent holding parts so that the sections
 - 10 being capable of being filled with a protein-containing sample, and
 - recessed parts provided between the crystallizing sections.
2. A protein crystallizing device according to claim 1,
 - 15 wherein said crystallizing agent holding parts are made from gels prepared in respectively different protein crystallization conditions.
3. A protein crystallizing device according to claim 1,
 - wherein said protein crystallizing microarray is a
 - 20 microarray having a plurality of hollow tubular bodies in an array.
4. A protein crystallizing device according to claim 1,
 - further comprising a mechanism which presses said protein crystallizing microarray and said plate into contact with
 - 25 each other.

5. A protein crystallizing device according to claim 1,
wherein a sealant is filled in said recessed parts.

6. A protein crystallizing device according to claim 1,
wherein a capacity of said crystallizing section is less
5 than 0.5 µl.

7. A protein crystallizing device according to claim 1,
wherein a capacity of said crystallizing section is 0.5 µl
or more.

8. A protein crystallizing device according to claim 1,
10 wherein said protein crystallizing microarray has 10 to
1000 of crystallizing agent holding parts.

9. A protein crystallizing device according to claim 1,
wherein said plate further has a crystal collection
mechanism which collects precipitated crystals in said
15 crystallizing sections.

10. A protein crystallizing device according to claim 1,
further comprising a detection mechanism which monitors
protein crystallization in said crystallizing sections.

11. A sample filling aid for filling a protein-containing
20 sample into said crystallizing sections of the protein
crystallizing device according to any one of claims 1
through 10, comprising:

punched holes having an arrangement corresponding to
said crystallizing sections, and a positioning mechanism

which makes the punched holes correspond to said crystallizing sections on said plate.

12. A protein crystallizing device according to any one of claim 1 through claim 10, wherein said plate is formed with 5 the positioning part which matches a position with a sample filling aid according to claim 11.

13. A screening method of protein crystallization conditions using the protein crystallizing device according to claim 12 and the sample filling aid according to claim 10 11, comprising the steps of:

placing the sample filling aid according to claim 11 on said plate so that said punched holes in the sample filling aid correspond to said crystallizing sections;

15 adding the protein-containing sample to said punched holes from the top of the sample filling aid so that said crystallizing sections are filled therewith;

taking out said sample filling aid ; and

20 laminating said plate and said protein crystallizing microarray so that said crystallizing sections and said crystallizing agent holding parts are in contact by corresponding to each other.

14. A protein crystallizing gel having sodium chloride held in a gel-like material comprising a type of monomer selected from a group consisting of acrylamide, 2-

acrylamide-2-methylpropanesulfonic acid, and
methacryldimethylaminoethylmethyl chloride salt.

15. A protein crystallizing gel having 2-methyl-2,4-pentanediol held in a gel-like material containing
5 dimethylacrylamide.

16. A protein crystallizing agent having sodium/potassium phosphate held in a gel-like material containing 2-acrylamide-2-methylpropanesulfonic acid.

17. A protein crystallizing gel having ammonium sulfate
10 held in a gel-like material containing
methacryldimethylaminoethylmethyl chloride salt.

18. A protein crystallizing gel having sodium malonate held in a gel-like material containing acrylamide.

19. A protein crystallizing gel having polyethylene glycol
15 6000 held in a gel-like material containing polyoxyethylene monoacrylate.